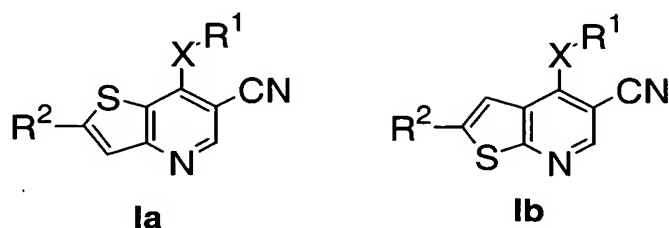


IN THE CLAIMS:

Please replace all prior versions of the claims in the application with the following claims:

1. (Currently amended) A compound of Formula (1a) or Formula (1b)



wherein:

X is -NH-, -NR⁴-, -O-, -S(O)_m-, -NHCH₂-;

m is an integer of 0-2;

n is an integer of 2-5;

q is an integer of 0-5;

R¹ is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -J, -NO₂, -CN, -N₃, -CHO, -CF₃, -OCF₃, -R⁴, -OR⁴, -S(O)_mR⁴, -NR⁴R⁴, -NR⁴S(O)_mR⁴, -OR⁶OR⁴, -OR⁶NR⁴R⁴, -N(R⁴)R⁶OR⁴, -N(R⁴)R⁶NR⁴R⁴, -NR⁴C(O)R⁴, -C(O)R⁴, -C(O)OR⁴, -C(O)NR⁴R⁴, -OC(O)R⁴, -OC(O)OR⁴, -OC(O)NR⁴R⁴, NR⁴C(O)R⁴, -NR⁴C(O)OR⁴, -NR⁴C(O)NR⁴R⁴, -R⁵OR⁴, -R⁵NR⁴R⁴, -R⁵S(O)_mR⁴, -R⁵C(O)R⁴, -R⁵C(O)OR⁴, -R⁵C(O)NR⁴R⁴, -R⁵OC(O)R⁴, -R⁵OC(O)OR⁴, -R⁵OC(O)NR⁴R⁴, -R⁵NR⁴C(O)R⁴, -R⁵NR⁴C(O)OR⁴, -R⁵NR⁴C(O)NR⁴R⁴, or YR⁷;

R² is -H, -R³, -J, -C(O)XR³, -CHO, wherein the R³ group may be substituted by one or more groups selected from -C(O)XR⁸, -CHO, -C(O)Q, 1,3-dioxolane, -R⁸, -(C(R⁹)₂)_qXR⁸, -(C(R⁹)₂)_qQ, -X(C(R⁹)₂)_nXR⁸, -X(C(R⁹)₂)_nQ, or -X(C(R⁹)₂)_qR⁸;

R³ is alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

R⁴ is H, alkyl of 1-6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, a *trans*-alkenyl of 2-6 carbon atoms, or an alkynyl of 2-6 carbon atoms;

R⁵ is a divalent group comprising alkyl of 1-6 carbon atoms, alkenyl of 2-6 carbon atoms, and alkynyl of 2-6 carbon atoms;

R⁶ is a divalent alkyl group of 2-6 carbon atoms;

R⁷ is a cycloalkyl ring of 3-7 carbons, an aryl or heteroaryl ring, a aryl or heteroaryl fused to one to three aryl or heteroaryl rings, wherein any of the aryl, cycloalkyl, or heteroaryl rings may be optionally substituted with one to four substituents selected from the group consisting of -H, -aryl, -CH₂-aryl, -NH-aryl, -O-aryl, -S(O)_m-aryl, -J, -NO₂, -CN, -N₃, -CHO, -CF₃, -OCF₃, -R⁴, -OR⁴, -S(O)_mR⁴, -NR⁴R⁴, -NR⁴S(O)_mR⁴, -OR⁶OR⁴, -OR⁶NR⁴R⁴, -N(R⁴)R⁶OR⁴, -N(R⁴)R⁶NR⁴R⁴, -NR⁴C(O)R⁴, -C(O)R⁴, -C(O)OR⁴, -C(O)NR⁴R⁴, -OC(O)R⁴-, -OC(O)OR⁴, -OC(O)NR⁴R⁴, -NR⁴C(O)R⁴, -NR⁴C(O)OR⁴, -NR⁴C(O)NR⁴R⁴, -R⁵OR⁴, R⁵NR⁴R⁴, -R⁵S(O)_mR⁴, -R⁵C(O)R⁴, -R⁵C(O)OR⁴, -R⁵C(O)NR⁴R⁴, -R⁵C(O)R⁴, -R⁵C(O)OR⁴, -R⁵C(O)NR⁴R⁴, -R⁵OC(O)R⁴, -R⁵OC(O)OR⁴, -R⁵OC(O)NR⁴R⁴, -R⁵NR⁴C(O)R⁴, -R⁵NR⁴C(O)OR⁴, or -R⁵NR⁴C(O)NR⁴R⁴;

R⁸ is -H, alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

R⁹ is -R⁴ or -F;

Y is -C(O)-, -C(O)O-, -OC(O)-, -C(O)NH-, -NHC(O)-, -NHSO₂-, -SO₂NH-, -C(OH)H-, -X(C(R⁹)₂)_q-, -(C(R⁹)₂)_q-, -(C(R⁹)₂)_qX-, -C≡C-, *cis*- and *trans*-CH=CH- and cycloalkyl of 3-10 carbon atoms;

Q is NZZ' wherein Z and Z' may be the same or different and may be H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl;

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur, optionally substituted with -R⁴ on a carbon or a nitrogen, or on nitrogen by a group -(C(R⁹)₂)_nXR³R⁴, -C(R⁹)₂)_nNZ''Z''', or on carbon by a group -(C(R⁹)₂)_qX-R³R⁴, -(C(R⁹)₂)_qNZ''Z'''

Z'' and Z''' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur;

Z'' and Z''' may be H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and

J is fluoro, chloro, bromo, and iodo; or

a pharmaceutically acceptable salt thereof.

2. (Original) A compound of formula Ia or Ib according to claim 1 wherein X is NH.

3. (Original) A compound of formula Ia or Ib according to claim 1 wherein R¹ is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -J, -CF₃, -OCF₃, -R⁴, -OR⁴ and YR⁷; and R⁷ is an aryl or heteroaryl ring, optionally substituted with one to four substituents selected from the group consisting of -H, -J, -CF₃, -OCF₃, -R⁴ and OR⁴.

4. (Original) A compound of formula Ia or Ib according to claim 1 wherein R¹ is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -Cl, -R⁴ and -OR⁴.

5. (Original) A compound of formula Ia or Ib according to claim 4 wherein R⁴ is alkyl of 1-6 carbon atoms.

6. (Original) A compound of formula Ia or Ib according to claim 1 wherein R² is substituted aryl or heteroaryl, wherein the substituent may be one or more groups selected from -(C(R⁹))₂Q.

7. (Original) A compound of formula Ia or Ib according to claim 6 wherein q is 1 to 3.

8. (Original) A compound of formula Ia or Ib according to claim 6 wherein R⁹ is H.

9. (Original) A compound of formula Ia or Ib according to claim 6 wherein Q is NZZ' wherein Z and Z' may be the same or different and may be H, alkyl of 1 to 6 carbon atoms; or Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen and oxygen, said ring may be substituted on nitrogen or carbon by R⁴ or on carbon by (CH₂)₂OH.

10. (Currently amended) A compound of formula Ia or Ib according to claim 1 wherein R² is R³ where R³ is alkynyl of 2-6 carbon atoms, aryl or heteroaryl; which groups may be substituted by one or more groups selected from

-R⁸, -(CH₂)_qOR⁸, -(CH₂)_qNHR⁸, -(CH₂)_qNR⁴R⁸, -(CH₂)_qQ,

-O(CH₂)_nOR⁸, -NH(CH₂)_nOR⁸, -NR⁴(CH₂)_nOR⁸,

-O(CH₂)_nNHR⁸, -NH(CH₂)_nNHR⁸, -NR⁴(CH₂)_nNHR⁸,

-O(CH₂)_nNR⁴R⁸, -NH(CH₂)_nCR⁸, -NR⁴(CH₂)_nNR⁴R⁸,

$-\text{O}(\text{CH}_2)_n\text{Q}$, $-\text{NH}(\text{CH}_2)_n\text{Q}$, $-\text{NR}^4(\text{CH}_2)_n\text{Q}$,

$-\text{O}(\text{CH}_2)_q\text{R}^8$; $-\text{NH}(\text{CH}_2)_q\text{R}^8$; or $-\text{NR}^4(\text{CH}_2)_q\text{R}^8$;

R^4 is H, alkyl of 1-6 carbon atoms;

R^8 is -H, alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

Y is $-\text{C}(\text{O})-$, $-\text{C}(\text{O})\text{O}-$, $-\text{OC}(\text{O})-$, $-\text{C}(\text{O})\text{NH}-$, $-\text{NHC}(\text{O})-$, $-\text{NHSO}_2-$, $-\text{S}-$, $-\text{O}-$, $-\text{NR}^4-$;

Q is NZZ' wherein Z and Z' may be the same or different and are selected from H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur, and may comprise morpholine, piperazine, piperidine, optionally substituted with $-\text{R}^4$ on a carbon or a nitrogen, or on nitrogen by a group $-(\text{CH}_2)_n\text{OR}^3\text{R}^4$, $-(\text{CH}_2)_n\text{NHR}^3$, $-(\text{CH}_2)_n\text{NR}^4\text{R}^3$, $-(\text{CH}_2)_n\text{NZ}''\text{Z}'''$, or on carbon by a group $-(\text{CH}_2)_q\text{OR}^3\text{R}^4$, $-(\text{CH}_2)_q\text{NHR}^3$, $-(\text{CH}_2)_q\text{NR}^4\text{R}^3$, $-(\text{CH}_2)_q\text{NZ}''\text{Z}'''$,

Z''' and Z'' may be the same or different and are selected from H, alkyl of 1 to 6 carbon atoms

Z'' and Z''' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may contain an additional heteroatom selected from nitrogen, oxygen and sulfur.

11. (Previously presented) A compound according to claim 1 selected from the group consisting of:

7-[(2,4-Dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-phenylthieno[3,2-b]pyridine-6-carbonitrile;

2-Bromo-7-[(2,4-dichloro-5-methoxyphenyl)amino]-thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]thieno[2,3-b]pyridine-5-carbonitrile;

4-({3-Chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-iodothieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-methylthieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-methylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenoxy)]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)thio]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorobenzyl) amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-morpholinylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-{[4-(2-hydroxyethyl)piperazin-1-yl]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(piperidin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-{6-Cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-2-yl}benzoic acid;

4-{6-Cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-2-yl}benzamide;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(4-methoxyphenyl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-2-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-(1-Benzofuran-2-yl)-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(3-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-formylphenyl)thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[2,3-b]pyridine-5-carbonitrile;

4-[5-Cyano-4-(3,4,5-trimethoxy-phenylamino)-thieno[2,3-b]pyridin-2-yl]-butyric acid methyl ester;

2-(4-Hydroxybutyl)-4-[(3,4,5-trimethoxyphenyl)amino]-thieno[2,3-b]pyridine-5-carbonitrile;

2-[4-(4-Morpholinyl)butyl]-4-[(3,4,5-trimethoxyphenyl)amino]-thieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(trimethylsilyl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-ethynylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-4-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(1,3-dioxolan-2-yl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(5-formylthien-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-[(4-methylpiperazin-1-yl)methyl]thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(4-hydroxypiperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(hydroxymethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-Iodo-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-(4-Formylphenyl)-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(4-Methylpiperazin-1-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Morpholin-4-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Hydroxymethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-Iodo-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-Bromo-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(4-Phenoxyphenyl)amino]-2-[(E)-2-pyridin-4-ylethenyl]thieno[3,2-b]pyridine-6-carbonitrile;

tert-Butyl-(2E)-3-{6-cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridin-2-yl}prop-2-enoate;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl]thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[2,3-b]pyridine-5-carbonitrile;

(2E)-3-(6-Cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridin-2-yl)prop-2-enoate;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(2-formyl-1-methyl-1H-imidazol-5-yl)thieno[3,2-b]pyridine-6-carbonitrile;

2-(4-Formylphenyl)-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(1E)-3-(4-methylpiperazin-1-yl)-3-oxoprop-1-enyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-[3-(4-Methylpiperazin-1-yl)prop-1-ynyl]-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(4-Methylpiperazin-1-yl)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{1-methyl-2-[(4-methylpiperazin-1-yl)methyl]-1H-imidazol-5-yl} thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)phenyl]thieno[3,2-b]pyridine-6-carbonitrile};

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(diethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-ethylpiperazin-1-ylmethyl)phenyl] thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2-Chloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2-Chloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno [3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}7-[(5-methoxy-2-methylphenyl)amino]-thieno[3,2-b]pyridine-6-carbonitrile;

7-[(5-Methoxy-2-methylphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl) phenyl] thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)amino]-2-{4[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl) phenyl] thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[6-(4-methylpiperazin-1-ylmethyl)pyridin-3-yl] thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{6-[(dimethylamino)methyl]pyridin-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(4-methylpiperazin-1-ylmethyl)furan-3-yl] thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]furan-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[4-(morpholin-4-ylbut-1-ynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[3-(diethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(5-formyl-2-furyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[5-(1,3-dioxolan-2-yl)-2-furyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]-2-furyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-ethylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-pyrrolidin-1-yl)piperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[[2-(dimethylamino)ethyl](methyl)amino]methyl}phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-(dimethylamino)phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{3-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{3-[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]-2-furyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-(1,3-dioxolan-2-yl)thien-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(2-formylthien-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(5-formylthien-2-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]thien-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{2-[(4-methylpiperazin-1-yl)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

- 7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-[[3-(dimethylamino)propyl](methyl)amino]methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;
- 7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(6-[(dimethylamino)methyl]pyridin-2-yl)ethynyl)thieno[3,2-b]pyridine-6-carbonitrile;
- 7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]thien-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;
- 7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-[(pyridin-4-ylmethyl)amino]methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;
- 7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(1H-pyrrol-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;
- 7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-[(2-methoxyethyl)amino]methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;
- 7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-([2-(methylthio)ethyl]amino)methyl]phenyl]thieno[3,2-b]pyridine-6-carbonitrile;
- 7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(thiomorpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;
- 7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(piperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;
- 7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-morpholin-4-ylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;
- 7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;
- 7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-{4-[(diethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;
- 7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(5-[(dimethylamino)methyl]pyridin-2-yl)ethynyl)thieno[3,2-b]pyridine-6-carbonitrile;
- 7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(1H-pyrazol-4-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;
- 7-[(2,4-dichlorophenyl)amino]-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(butylamino)methyl]phenyl}-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(1-oxidothiomorpholin-4-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(diethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(3-hydroxypropyl)amino]methyl}phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)pyridin-2-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(6-morpholin-4-ylpyridin-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-ethoxyphenyl)amino]-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(1,1-dioxidothiomorpholin-4-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-pyridin-2-ylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-phenylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(2R,5S)-2,5-dimethylpiperazin-1-yl]methyl}phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-ethoxyphenyl)amino]-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-methylpiperazin-1-yl)carbonyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{[4-(2-methoxyphenyl)piperazin-1-yl]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{[(3-methylbutyl)amino]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{[4-(methylsulfonyl)piperazin-1-yl]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-ethoxyphenyl)amino]-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{[4-(pyridin-2-ylmethyl)piperazin-1-yl]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{1-[2-(dimethylamino)ethyl]-1H-pyrrol-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-[4-(dimethylamino)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[(1-methyl-1H-imidazol-5-yl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{6-[(dimethylamino)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(1H-pyrazol-4-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{[1-(2-hydroxyethyl)-1H-pyrazol-4-yl]ethynyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[1-(2-morpholin-4-ylethyl)-1H-pyrazol-4-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(diethylamino)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[2-(dimethylamino)ethyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[1-(2-hydroxyethyl)-1H-pyrazol-4-yl]thieno[3,2-b]pyridine-6-carbonitrile;

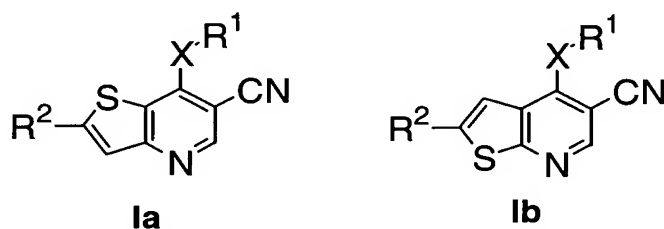
4-{6-cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridin-2-yl}-N,N-dimethylbenzamide;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]-3-furyl}thieno[3,2-b]pyridine-6-carbonitrile; and

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(5-formyl-3-furyl)thieno[3,2-b]pyridine-6-carbonitrile.

12. (Original) A compound of formula Ia or Ib according to claim 1 wherein R¹ is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -J, -CF₃, -OCF₃, -R⁴, -OR⁴ and YR⁷; and R⁷ is an aryl or heteroaryl ring, optionally substituted with one to four substituents selected from the group consisting of -H, -J, -CF₃, -OCF₃, -R⁴ and OR⁴.

13. (Previously presented) A compound of Formula (1a) or Formula (1b)



wherein:

X is -NH-;

q = 1-3;

R¹ is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -Cl, -R⁴, -OR⁴;

R² is R³ where R³ is substituted aryl or heteroaryl, wherein the substituent may be one or more groups selected from $-(C(R^9)_2)_qQ$;

R⁴ is alkyl of 1-6 carbon atoms;

R⁹ is H;

Q is NZZ' wherein Z and Z' may be the same or different and are H or alkyl of 1 to 6 carbon atoms;

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen and oxygen, said ring may be substituted on nitrogen or carbon by R⁴ or on carbon by (CH₂)₂OH; or

a pharmaceutically acceptable salt thereof.

14. (Previously presented) A compound according to claim 13 selected from the group consisting of:

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl) phenyl] thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-[(Dimethylamino)methyl]phenyl]-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-[(dimethylamino)methyl]phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-morpholinylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-[[4-(2-hydroxyethyl)piperazin-1-yl]methyl]phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(piperidin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-[(4-methylpiperazin-1-yl)methyl]thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

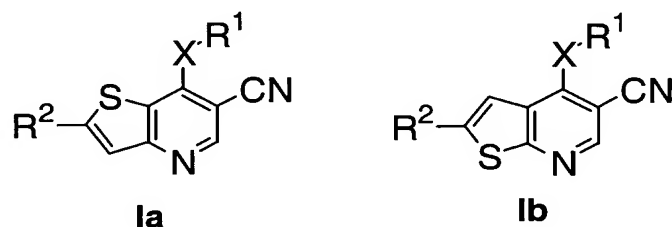
7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(4-hydroxypiperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[4-methylpiperazin-1-yl)methyl]pyridin-2-yl}thienol[3,2-b]pyridine-6-carbonitrile; and

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(piperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile.

15. (Currently amended) A compound of Formula (1a) or Formula (1b)



wherein:

X is -NH-;

n is an integer of 2-5

q is an integer of 0-5;

R¹ is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -J, -CF₃, -OCF₃, -R⁴, -OR⁴, or YR⁷;

R² is R³ where R³ is alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

and may be substituted by one or more groups selected from

-R⁸, -(CH₂)ₑOR⁸, -(CH₂)ₑNHR⁸, -(CH₂)ₑNR⁴R⁸, -(CH₂)ₑQ,

-O(CH₂)ₑOR⁸, -NH(CH₂)ₑOR⁸, -NR⁴(CH₂)ₑOR⁸,

-O(CH₂)ₑNHR⁸, -NH(CH₂)ₑNHR⁸, -NR⁴(CH₂)ₑNHR⁸,

-O(CH₂)ₑNR⁴R⁸, -NH(CH₂)ₑCR⁸, -NR⁴(CH₂)ₑNR⁴R⁸,

-O(CH₂)ₑQ, -NH(CH₂)ₑQ, -NR⁴(CH₂)ₑQ,

-O(CH₂)ₑR⁸; -NH(CH₂)ₑR⁸; or -NR⁴(CH₂)ₑR⁸;

R⁴ is H, alkyl of 1-6 carbon atoms;

R⁷ is an aryl or heteroaryl ring, optionally substituted with one to four substituents selected from the group consisting of -H, -J, -CF₃, -OCF₃, -R⁴, -OR⁴;

R⁸ is -H, alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

Y is -C(O)-, -C(O)O-, -OC(O)-, -C(O)NH-, -NHC(O)-, -NHSO₂-, -S-, -O-, -NR⁴-;

Q is NZZ' wherein Z and Z' may be the same or different and are selected from H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur, and may comprise morpholine, piperazine, piperidine, optionally substituted with -R⁴ on a carbon or a nitrogen, or on nitrogen by a group -(CH₂)_nOR³R⁴, -(CH₂)_nNHR³, -(CH₂)_nNR⁴R³, -(CH₂)_nNZ''Z''', or on carbon by a group -(CH₂)_qOR³R⁴, -(CH₂)_qNHR³, -(CH₂)_qNR⁴R³, -(CH₂)_qNZ''Z'''

Z''' and Z'' may be the same or different and are selected from H, alkyl of 1 to 6 carbon atoms

Z'' and Z''' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may contain an additional heteroatom selected from nitrogen, oxygen and sulfur;

And J is fluoro, chloro, bromo and iodo

16. (Previously presented) A compound according to claim 15 selected from the group consisting of:

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-phenylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-morpholinylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-[[4-(2-hydroxyethyl)piperazin-1-yl]methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(piperidin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(4-methoxyphenyl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-2-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-ethynylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-4-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(4-hydroxypiperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(hydroxymethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(4-Methylpiperazin-1-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Morpholin-4-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Hydroxymethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(4-Phenoxyphenyl)amino]-2-[(E)-2-pyridin-4-ylethenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl]thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(2-formyl-1-methyl-1H-imidazol-5-yl)thieno[3,2-b]pyridine-6-carbonitrile;

2-[3-(4-Methylpiperazin-1-yl)prop-1-ynyl]-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-[(4-Methylpiperazin-1-yl)methyl]phenyl]-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{1-methyl-2-[(4-methylpiperazin-1-yl)methyl]-1H-imidazol-5-yl} thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

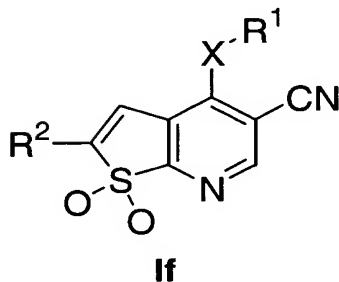
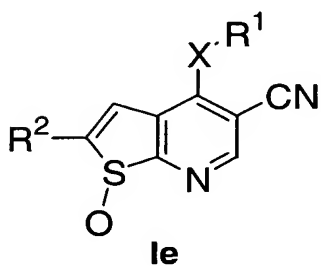
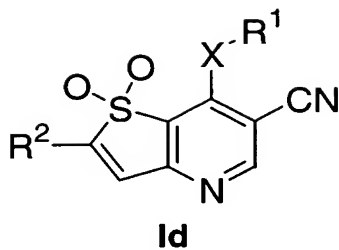
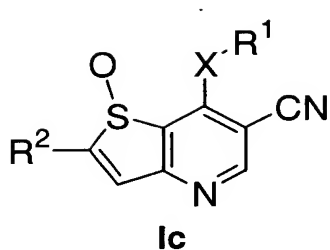
2-[4-[(Dimethylamino)methyl]phenyl]-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile; and

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-[(dimethylamino)methyl]phenyl]thieno[3,2-b]pyridine-6-carbonitrile.

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[4-methylpiperazin-1-yl)methyl]pyridin-2-yl}thienol[3,2-b]pyridine-6-carbonitrile; and

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(piperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile.

17. (Previously presented) A compound of Formula (1c), Formula (1d), (1e) or (1f):



wherein: X, R¹ and R² are as defined in claim 1.

18. (Previously presented) A compound according to claim 17 selected from the group consisting of:

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]-1-oxo-1H-thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]-1,1-dioxo-1H-thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}-1-oxo-1H-thieno[3,2-b]pyridine-6-carbonitrile;

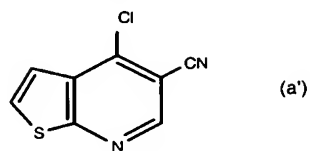
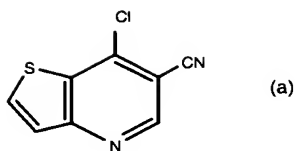
7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}-1,1-dioxo-1H-thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}-1-oxo-7-[(3,4,5-trimethoxyphenyl)amino]-1H-thieno[3,2-b]pyridine-6-carbonitrile; or

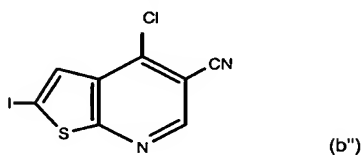
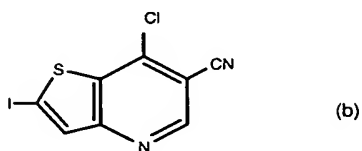
2-{4-[(Dimethylamino)methyl]phenyl}-1,1-dioxo-7-[(3,4,5-trimethoxyphenyl)amino]-1H-thieno[3,2-b]pyridine-6-carbonitrile.

19. (Previously presented) A process of producing a compound of Formula (1a) or Formula (1b) of claim 1, wherein R² is iodine, comprising:

a) treating with a base, in an inert solvent at reduced temperature a compound of Formula (a) or (a');;



b.) adding iodine to the compound in step (a) to form a compound of Formula (b) or (b'); and

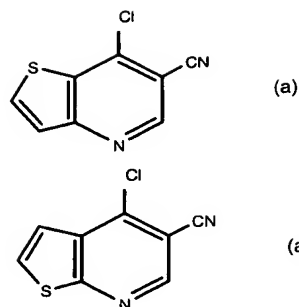


c.) adding a compound of formula R^1XH to the compound in step (b) to form a compound of Formula (Ia) or (Ib), wherein R^2 is iodine.

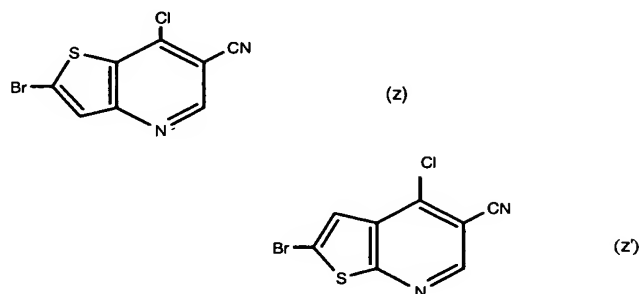
20. (Canceled)

21. (Original) A process of producing a compound of Formula (Ia) or (Ib) of claim 1, wherein R^2 is bromine, comprising:

a.) treating with a base, in an inert solvent at reduced temperature a compound of Formula (a) or (a');



b.) adding 1,1-dibromo-1,1,2,2-tetrafluoroethane or bromine to the compound in step (a) to form a compound of Formula (z) or (z'); and



c.) adding a compound of formula R^1XH to the compound in step (b) to form a compound of Formula (1a) or (1b), wherein R^2 is bromine.

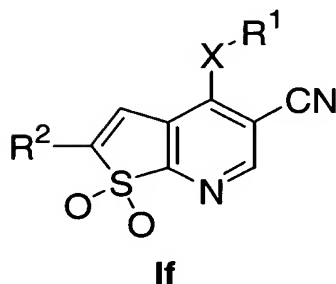
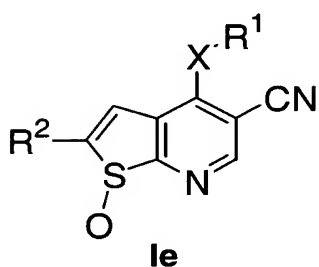
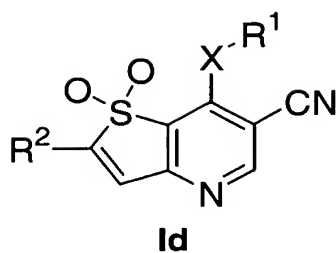
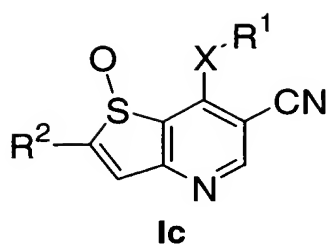
22-37. (Canceled)

38. (Previously presented) A pharmaceutical composition comprising a compound of Formula (1a) or (1b) or a pharmaceutically acceptable salt thereof.

39. (Original) A pharmaceutical composition of formula 1a or 1b according to claim 38 wherein X is NH.

40. (Previously presented) A pharmaceutical composition of formula 1a or 1b according to claim 38 wherein R^1 is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -J, -CF₃, -OCF₃, -R⁴, -OR⁴ and YR⁷; and R⁷ is an aryl or heteroaryl ring, optionally substituted with one to four substituents selected from the group consisting of -H, -J, -CF₃, -OCF₃, -R⁴ and OR⁴.

41. (Currently amended) A pharmaceutical composition comprising a compound of Formula (1c), (1d), (1e) and (1f)



wherein:

X is -NH-, -NR⁴-, -O-, -S(O)_m-, -NHCH₂-;

m is an integer of 0-2;

n is an integer of 2-5;

q is an integer of 0-5;

R¹ is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -J, -NO₂, -CN, -N₃, -CHO, -CF₃, -OCF₃, -R⁴, -OR⁴, -S(O)_mR⁴, -NR⁴R⁴, -NR⁴S(O)_mR⁴, -OR⁶OR⁴, -OR⁶NR⁴R⁴, -N(R⁴)R⁶OR⁴, -N(R⁴)R⁶NR⁴R⁴, -NR⁴C(O)R⁴, -C(O)R⁴, -C(O)OR⁴, -C(O)NR⁴R⁴, -OC(O)R⁴, -OC(O)OR⁴, -OC(O)NR⁴R⁴, NR⁴C(O)R⁴, -NR⁴C(O)OR⁴, -NR⁴C(O)NR⁴R⁴, -R⁵OR⁴, -R⁵NR⁴R⁴, -R⁵S(O)_mR⁴, -R⁵C(O)R⁴, -R⁵C(O)OR⁴, -R⁵C(O)NR⁴R⁴, -R⁵OC(O)R⁴, -R⁵OC(O)OR⁴, -R⁵OC(O)NR⁴R⁴, -R⁵NR⁴C(O)R⁴, -R⁵NR⁴C(O)OR⁴, -R₅NR₄C(O)NR⁴R⁴, or YR⁷;

R² is -H, -R³, -J, -C(O)XR³, -CHO, wherein the R³ group may be substituted by one or more groups selected from -C(O)XR⁸, -CHO, -C(O)Q, 1,3-dioxolane, -R⁸, -(C(R⁹)₂)_qXR⁸, -(C(R⁹)₂)_qQ, -X(C(R⁹)₂)_nXR⁸, -X(C(R⁹)₂)_nQ, or -X(C(R⁹)₂)_qR⁸;

R³ is alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

R⁴ is H, alkyl of 1-6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, a *trans*-alkenyl of 2-6 carbon atoms, or an alkynyl of 2-6 carbon atoms;

R⁵ is a divalent group comprising alkyl of 1-6 carbon atoms, alkenyl of 2-6 carbon atoms, and alkynyl of 2-6 carbon atoms;

R⁶ is a divalent alkyl group of 2-6 carbon atoms;

R⁷ is a cycloalkyl ring of 3-7 carbons optionally substituted with one to four substituents selected from the group consisting of alkyl groups of 1 to 6 carbons, an aryl or heteroaryl ring, a aryl or heteroaryl fused to one to three aryl or heteroaryl rings, wherein any of the aryl or heteroaryl rings may be optionally substituted with one to four substituents selected from the group consisting of -H, -aryl, -CH₂-aryl, -NH-aryl, -O-aryl, -S(O)_m-aryl, -J, -NO₂, -CN, -N₃, -CHO, -CF₃, -OCF₃, -R⁴, -OR⁴, -S(O)_mR⁴, -NR⁴R⁴, -NR⁴S(O)_mR⁴, -OR⁶OR⁴, -OR⁶NR⁴R⁴, -N(R⁴)R⁶OR⁴, -N(R⁴)R⁶NR⁴R⁴, -NR⁴C(O)R⁴, -C(O)R⁴, -C(O)OR⁴, -C(O)NR⁴R⁴, -OC(O)R⁴, -OC(O)OR⁴, -OC(O)NR⁴R⁴, -NR⁴C(O)R⁴, -NR⁴C(O)OR⁴, -NR⁴C(O)NR⁴R⁴, -R⁵OR⁴, R⁵NR⁴R⁴, -R⁵S(O)_mR⁴, -R⁵C(O)R⁴, -R⁵C(O)OR⁴, -R⁵C(O)NR⁴R⁴, -R⁵C(O)R⁴, -R⁵C(O)OR⁴, -R⁵C(O)NR⁴R⁴, -R⁵OC(O)R⁴, -R⁵OC(O)OR⁴, -R⁵OC(O)NR⁴R⁴, -R⁵NR⁴C(O)R⁴, -R⁵NR⁴C(O)OR⁴, or -R⁵NR⁴C(O)NR⁴R⁴;

R⁸ is -H, alkenyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

R⁹ is -R⁴ or -F;

Y is -C(O)-, -C(O)O-, -OC(O)-, -C(O)NH-, -NHC(O)-, -NHSO₂-, -SO₂NH-, -C(OH)H-, -X(C(R⁹)₂)_q-, -(C(R⁹)₂)_q-, -(C(R⁹)₂)_qX-, -C≡C-, *cis*- and *trans*-CH=CH- and cycloalkyl of 3-10 carbon atoms;

Q is NZZ' wherein Z and Z' may be the same or different and are H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur, and may comprise morpholine, piperazine, piperidine, optionally substituted with -R⁴ on a carbon or a nitrogen, or on nitrogen by a group -(C(R⁹)₂)_nXR³R⁴, -(C(R⁹)₂)_nNZ''Z''', or on carbon by a group -(C(R⁹)₂)_qXR³R⁴, -(C(R⁹)₂)_qNZ''Z'''

wherein Z'' and Z''' may be the same or different and are H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and Z'' and Z'''

taken together with the nitrogen to which they are attached may form a heterocyclic ring which may contain an additional heteroatom selected from nitrogen, oxygen and sulfur; and

J is fluoro, chloro, bromo, and iodo, and a pharmaceutically acceptable carrier.

42. (Previously presented) A pharmaceutical composition according to claim 38 wherein the compound is selected from the group consisting of:

7-[(2,4-Dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-phenylthieno[3,2-b]pyridine-6-carbonitrile;

2-Bromo-7-[(2,4-dichloro-5-methoxyphenyl)amino]-thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]thieno[2,3-b]pyridine-5-carbonitrile;

4-[(3-Chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl)amino]thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-iodothieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-methylthieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-methylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenoxy)]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)thio]thieno[3,2-b]pyridine -6-carbonitrile;

7-[(2,4-Dichlorobenzyl) amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-morpholinylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-[[4-(2-hydroxyethyl)piperazin-1-yl]methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(piperidin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-{6-Cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-2-yl}benzoic acid;

4-{6-Cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-2-yl}benzamide;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(4-methoxyphenyl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-2-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-(1-Benzofuran-2-yl)-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(3-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-formylphenyl)thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[2,3-b]pyridine-5-carbonitrile;

4-[5-Cyano-4-(3,4,5-trimethoxy-phenylamino)-thieno[2,3-b]pyridin-2-yl]-butyric acid methyl ester;

2-(4-Hydroxybutyl)-4-[(3,4,5-trimethoxyphenyl)amino]-thieno[2,3-b]pyridine-5-carbonitrile;

2-[4-(4-Morpholinyl)butyl]-4-[(3,4,5-trimethoxyphenyl)amino]-thieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(trimethylsilyl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-ethynylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-4-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(1,3-dioxolan-2-yl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(5-formylthien-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(4-hydroxypiperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(hydroxymethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-Iodo-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-(4-Formylphenyl)-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(4-Methylpiperazin-1-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Morpholin-4-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Hydroxymethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-Iodo-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-Bromo-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(4-Phenoxyphenyl)amino]-2-[(E)-2-pyridin-4-ylethenyl]thieno[3,2-b]pyridine-6-carbonitrile;

tert-Butyl-(2E)-3-{6-cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridin-2-yl}prop-2-enoate;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl]thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[2,3-b]pyridine-5-carbonitrile;

(2E)-3-(6-Cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridin-2-yl)prop-2-enoate;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(2-formyl-1-methyl-1H-imidazol-5-yl)thieno[3,2-b]pyridine-6-carbonitrile;

2-(4-Formylphenyl)-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(1E)-3-(4-methylpiperazin-1-yl)-3-oxoprop-1-enyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-[3-(4-Methylpiperazin-1-yl)prop-1-ynyl]-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-[(4-Methylpiperazin-1-yl)methyl]phenyl]-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{1-methyl-2-[(4-methylpiperazin-1-yl)methyl]-1H-imidazol-5-yl} thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl] thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(diethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-ethylpiperazin-1-ylmethyl)phenyl] thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2-Chloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2-Chloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno [3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}7-[(5-methoxy-2-methylphenyl)amino]-thieno[3,2-b]pyridine-6-carbonitrile;

7-[(5-Methoxy-2-methylphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl) phenyl] thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)amino]-2-{4[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl) phenyl] thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[6-(4-methylpiperazin-1-ylmethyl)pyridin-3-yl] thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{6-[(dimethylamino)methyl]pyridin-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(4-methylpiperazin-1-ylmethyl)furan-3-yl]thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]furan-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[4-(morpholin-4-ylbut-1-ynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[3-(diethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(5-formyl-2-furyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[5-(1,3-dioxolan-2-yl)-2-furyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]-2-furyl}thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-ethylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-pyrrolidin-1-yl)piperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-[[[2-(dimethylamino)ethyl](methyl)amino]methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(dimethylamino)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{3-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{3-[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]-2-furyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[5-(1,3-dioxolan-2-yl)thien-2-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(2-formylthien-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(5-formylthien-2-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]thien-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{2-[(4-methylpiperazin-1-yl)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-[[[3-(dimethylamino)propyl](methyl)amino]methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-({6-[(dimethylamino)methyl]pyridin-2-yl}ethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]thien-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-[[pyridin-4-ylmethyl]amino]methyl)phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(1H-pyrrol-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-[(2-methoxyethyl)amino]methyl)phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-([2-(methylthio)ethyl]amino)methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(thiomorpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(piperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-morpholin-4-ylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-([3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl]amino)-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-([3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl]amino)-2-[4-[(diethylamino)methyl]phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-([5-[(dimethylamino)methyl]pyridin-2-yl]ethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(1H-pyrazol-4-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[5-[(4-methylpiperazin-1-yl)methyl]pyridin-2-yl]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-[(butylamino)methyl]phenyl]-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-[(1-oxidothiomorpholin-4-yl)methyl]phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(diethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(3-hydroxypropyl)amino]methyl}phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)pyridin-2-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(6-morpholin-4-ylpyridin-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-ethoxyphenyl)amino]-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(1,1-dioxidothiomorpholin-4-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-pyridin-2-ylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-phenylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(2R,5S)-2,5-dimethylpiperazin-1-yl]methyl}phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-ethoxyphenyl)amino]-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-methylpiperazin-1-yl)carbonyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-(2-methoxyphenyl)piperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(3-methylbutyl)amino]methyl}phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{[4-(methylsulfonyl)piperazin-1-yl]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-ethoxyphenyl)amino]-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{[4-(pyridin-2-ylmethyl)piperazin-1-yl]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{1-[2-(dimethylamino)ethyl]-1H-pyrrol-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-[4-(dimethylamino)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[(1-methyl-1H-imidazol-5-yl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{6-[(dimethylamino)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(1H-pyrazol-4-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[[1-(2-hydroxyethyl)-1H-pyrazol-4-yl]ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[1-(2-morpholin-4-ylethyl)-1H-pyrazol-4-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(diethylamino)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[2-(dimethylamino)ethyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

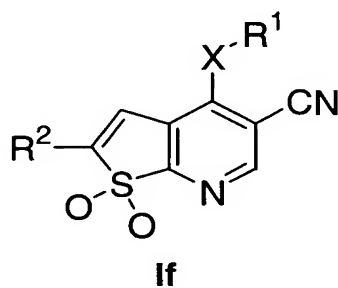
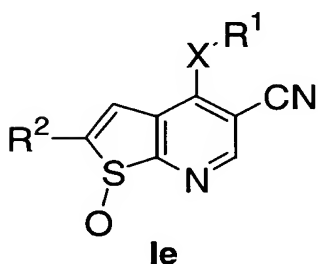
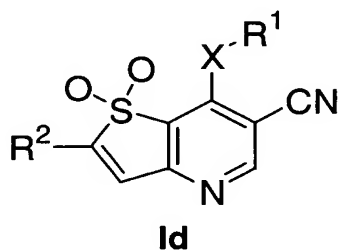
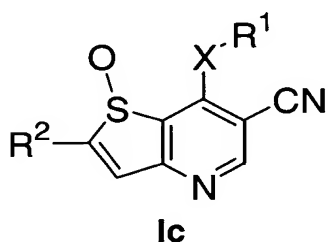
7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[1-(2-hydroxyethyl)-1H-pyrazol-4-yl]thieno[3,2-b]pyridine-6-carbonitrile;

4-{6-cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridin-2-yl}-N,N-dimethylbenzamide;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]-3-furyl}thieno[3,2-b]pyridine-6-carbonitrile; and

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(5-formyl-3-furyl)thieno[3,2-b]pyridine-6-carbonitrile and a pharmaceutically acceptable carrier.

43. (Currently amended) A compound of Formula (1c), Formula (1d), (1e), and (1f)



wherein:

X is -NH-;

q is an integer of 0-5;

R¹ is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -J, -CF₃, -OCF₃, -R⁴, -OR⁴, or YR⁷;

R² is -R³, wherein R³ is alkynyl of 2-6 carbon atoms, aryl or heteroaryl, group may by one groups selected from -C(O)XR⁸, -CHO, -C(O)Q, 1,3-dioxolane, -R⁸;

R⁴ is H, alkyl of 1-6 carbon atoms;

R⁷ is an aryl or heteroaryl ring optionally substituted with one to four substituents selected from the group consisting of -H, -CF₃, -OCF₃, -R⁴, -OR⁴;

R⁸ is -H, alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

Y is -C(O)-, -C(O)O-, -OC(O)-, -C(O)NH-, -NHC(O)-, -NHSO₂-;

Q is NZZ' wherein Z and Z' may be the same or different and are H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur, and may comprise morpholine, piperazine, piperidine, optionally substituted with -R⁴ on a carbon or a nitrogen, or on nitrogen by a group -(C(R⁹)₂)_nXR³R⁴, -(C(R⁹)₂)_nNZ''Z''', or on carbon by a group -(C(R⁹)₂)_qXR³R⁴, -(C(R⁹)₂)_qNZ''Z''' ,

wherein Z'' and Z''' may be the same or different and are H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and Z'' and Z''' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may contain an additional heteroatom selected from nitrogen, oxygen and sulfur; and

J is fluoro, chloro, bromo, and iodo, and a pharmaceutically acceptable carrier.

44. (Previously presented) A pharmaceutical composition according to claim 41 wherein the compound is selected from the group consisting of:

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]-1-oxo-1H-thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]-1,1-dioxo-1H-thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}-1-oxo-1H-thieno[3,2-b]pyridine-6-carbonitrile;

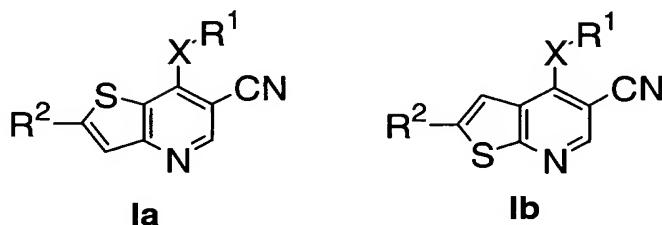
7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}-1,1-dioxo-1H-thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}-1-oxo-7-[(3,4,5-trimethoxyphenyl)amino]-1H-thieno[3,2-b]pyridine-6-carbonitrile; and

2-{4-[(Dimethylamino)methyl]phenyl}-1,1-dioxo-7-[(3,4,5-trimethoxyphenyl)amino]-1H-thieno[3,2-b]pyridine-6-carbonitrile and a pharmaceutically acceptable carrier.

45-52. (Canceled)

53. (Currently amended) A pharmaceutical composition comprising a compound of Formula (1a) or Formula (1b)



wherein:

X is -NH-,

n is an integer of 2-5;

q is an integer of 0-5;

R¹ is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -J, -CF₃, -OCF₃, -R⁴, -OR⁴, or YR⁷;

R² is R³ where R³ is alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

and may be substituted by one or more groups selected from

-R⁸, -(CH₂)_qOR⁸, -(CH₂)_qNHR⁸, -(CH₂)_qNR⁴R⁸, -(CH₂)_qQ,

-O(CH₂)_nOR⁸, -NH(CH₂)_nOR⁸, -NR⁴(CH₂)_nOR⁸,

-O(CH₂)_nNHR⁸, -NH(CH₂)_nNHR⁸, -NR⁴(CH₂)_nNHR⁸,

-O(CH₂)_nNR⁴R⁸, -NH(CH₂)_nCR⁸, -NR⁴(CH₂)_nNR⁴R⁸,

-O(CH₂)_nQ, -NH(CH₂)_nQ, -NR⁴(CH₂)_nQ,

-O(CH₂)_qR⁸; -NH(CH₂)_qR⁸; or -NR⁴(CH₂)_qR⁸;

R⁴ is H, alkyl of 1-6 carbon atoms;

R⁷ is an aryl or heteroaryl ring, optionally substituted with one to four substituents selected from the group consisting of -H, -J, -CF₃, -OCF₃, -R⁴, -OR⁴;

R⁸ is -H, alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

Y is -C(O)-, -C(O)O-, -OC(O)-, -C(O)NH-, -NHC(O)-, -NHSO₂-, -S-, -O-, -NR⁴-;

Q is NZZ' wherein Z and Z' may be the same or different and are selected from H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur, and may comprise morpholine, piperazine, piperidine, optionally substituted with -R⁴ on a carbon or a nitrogen, or on nitrogen by a group -(CH₂)_nOR³R⁴, -(CH₂)_nNHR³, -(CH₂)_nNR⁴R³, -(CH₂)_nNZ"Z"', or on carbon by a group -(CH₂)_qOR³R⁴, -(CH₂)_qNHR³, -(CH₂)_qNR⁴R³, -(CH₂)_qNZ"Z"',

Z'" and Z" may be the same or different and are selected from H, alkyl of 1 to 6 carbon atoms

Z" and Z'" taken together with the nitrogen to which they are attached may form a heterocyclic ring which may contain an additional heteroatom selected from nitrogen, oxygen and sulfur;

And J is fluoro, chloro, bromo and iodo and a pharmaceutically acceptable carrier.

54. (Previously presented) A composition according to claim 53 wherein the compound is selected from the group consisting of:

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-phenylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-morpholinylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-{[4-(2-hydroxyethyl)piperazin-1-yl]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(piperidin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(4-methoxyphenyl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-2-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-ethynylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-4-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(4-hydroxypiperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(hydroxymethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(4-Methylpiperazin-1-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Morpholin-4-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Hydroxymethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(4-Phenoxyphenyl)amino]-2-[(E)-2-pyridin-4-ylethenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl]thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(2-formyl-1-methyl-1H-imidazol-5-yl)thieno[3,2-b]pyridine-6-carbonitrile;

2-[3-(4-Methylpiperazin-1-yl)prop-1-ynyl]-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(4-Methylpiperazin-1-yl)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{1-methyl-2-[(4-methylpiperazin-1-yl)methyl]-1H-imidazol-5-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[4-(morpholin-4-ylbut-1-ynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[3-(diethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile; and

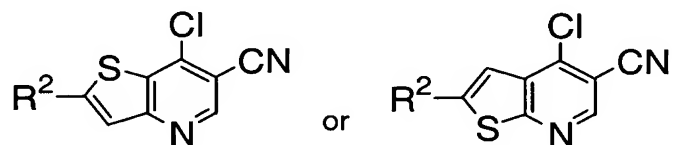
7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[4-methylpiperazin-1-yl)methyl]pyridin-2-yl}thienol[3,2-b]pyridine-6-carbonitrile; and

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(piperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile.

55. (Original) A process for preparing a compound of formula (1a) or (1b) as defined in claim 1 or a pharmaceutically acceptable salt thereof, which comprises one of the following:

a) reacting a compound of formula:



or an S-oxide or S-dioxide thereof; wherein R² is as defined in Claim 1 with a compound of formula R¹XH where R¹ and X are as defined in Claim 1 to give a compound of formula I(a) or (Ib);

or

b) reacting a compound of formula 1a or 1b or an S-oxide or S-dioxide thereof in which R² is a reactive substituent group to give a compound of formula 1a or 1b in which R² is a different substituent group as defined in claim 1;

or

c) optionally converting a compound of formula (1a) or (1b) to a pharmaceutically acceptable salt thereof.

56. (Canceled)